NORTH CAROLINA DIVISION OF AIR QUALITY

Application Review

Issue Date:

Region: Washington Regional Office
County: Hertford
NC Facility ID: 4600082
Inspector's Name: Betsy Huddleston
Date of Last Inspection: 06/04/2019
Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): Perdue Agribusiness, LLC-Cofield

Facility Address:
Perdue Agribusiness, LLC-Cofield
242 Perdue Road
Cofield, NC 27922

SIC: 2048 / Prepared Feeds Nec
NAICS: 311222 / Soybean Processing

Facility Classification: Before: Title V **After:** Title V
Fee Classification: Before: Title V **After:** Title V

Permit Applicability (this application only)

SIP: 15A NCAC, 02D .0503, 02D .0515, 02D .0516, 02D .0521, 0524, .0317, .1100
NSPS: Subpart Dc, Subpart IIII
NESHAP: Subpart Boiler-112j, Subpart DDDDD, GGGG, ZZZZ
PSD: Minor
PSD Avoidance: Yes
NC Toxics: Yes
112(r): N/A
Other: N/A

Contact Data

Facility Contact	Authorized Contact	Technical Contact
Joey Baggett Regional Environmental Manager (252) 348-4383 PO Box 460 Lewiston, NC 27849 Joey.baggett@perdue.com	Philip Sisler Feedmill Manager (252) 358-8245 242 Perdue Road Cofield, NC 27922 Philip.sisler@perdue.com	Joey Baggett Regional Environmental Manager (252) 348-4383 PO Box 460 Lewiston, NC 27849 Joey.baggett@perdue.com

Application Data

Application Number: 4600082.19A
Date Received: 12/27/2018
Application Type: Renewal
Application Schedule: TV-Renewal

Existing Permit Data
Existing Permit Number: 02875/T32
Existing Permit Issue Date: 09/20/2016
Existing Permit Expiration Date: 09/30/2019

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2018	0.0500	5.32	194.11	6.33	22.40	104.01	104.01 [Hexane, n-]
2017	0.0300	3.05	126.23	2.99	22.82	67.73	67.73 [Hexane, n-]
2016	0.0200	3.77	173.32	3.46	24.84	92.85	92.85 [Hexane, n-]
2015	0.0200	3.48	175.44	3.07	24.01	94.15	94.15 [Hexane, n-]
2014	0.1700	3.97	201.83	3.49	23.83	94.06	94.06 [Hexane, n-]

Review Engineer: Alice Wessner

Review Engineer's Signature: Alice M. Wessner **Date:** 6/10/2020

Comments / Recommendations:
Issue: 02875/T33
Permit Issue Date:
Permit Expiration Date:

1. Purpose of Application

Perdue Agribusiness, LLC - Cofield currently holds Title V Permit No. 02875T32 with an expiration date of September 30, 2019 for a feed and soybean milling, oil extraction and grain storage facility in Cofield, Hertford County, North Carolina. This permit application is for a permit renewal without modification. The renewal application was received on December 27, 2018, or at least six months prior to the expiration date. Therefore, the existing permit shall not expire until the renewal permit has been issued or denied. All terms and conditions of the existing permit shall remain in effect until the renewal permit has been issued or denied.

2. Facility Description

Perdue operations in Cofield, Hertford County, North Carolina include feed milling, soybean milling, oil extraction, and grain storage. The vegetable oil production process is a collection of continuous process equipment and activities that produce crude vegetable oil and meal products by removing oil from soybeans through direct contact with an organic solvent, such as a hexane isomer blend. Soybean meal and corn meal are processed in the feed mill to produce feed pellets. Perdue is a major source of hazardous air pollutants (HAP) and has several PSD avoidance conditions.

Feedmill

Soybean meal either from the soybean oil extraction process or shipped in from another facility and corn meal (also received from offsite) are mixed to create a mash. The mash is extruded to form pellets in the pellet mills. After the pellets are dried, the pellets are sent to distribution bins for shipping.

Soybean Plant

Whole soybeans enter the plant and are first cut into pieces using cracking rolls. Then the cracked soybeans are processed through a series of dehulling tables. Hulls from the dehulling tables are sent to grinders before being stored in the hull tank. The separated soybeans are sent to a bean conditioner where they are heated and then to flaking rolls which turns the bean pieces into flakes. The soybean flakes are sent to an extractor where the meal is separated from the oil using hexane. The soybean meal is either used onsite in the feedmill or shipped to other feedmills. A mixture of oil and hexane then is concentrated in the evaporator. The concentrated oil is further heated and sent through an oil still, and the final oil product is sent through a degumming process to remove impurities. The oil product is then shipped offsite.

3. Permit History/Application Chronology

September 20, 2016	Air Permit issued with an expiration date of September 30, 2019.
December 27, 2018	Renewal application received
January 11, 2019	Permit Acknowledgement Letter
May 9, 2019	Requested additional information about boilers ESB3 and ESB5 via email to Mr. Wayne Black of Perdue Agribusiness
May 17, 2019	Mr. Wayne Black responded by email with answers to our questions
April 10, 2020	Comments received from Booker Pullen, permitting supervisor
April 13, 2020	Emailed draft permit to regional office
April 13, 2020	Comments from regional office received
April 27, 2020	Emailed draft permit to Mr. Joey Baggett of Perdue Agribusiness

May 13, 2020	Comments from Permittee received
XXXX, 2020	Draft permit and permit review forwarded to public notice
XXXX, 2020	Public comment period ends. No comments received. (one month)
XXXX, 2020	EPA comment period ends.
XXXX, 2020	Permit issued.

4. Changes to Existing Permit

The following changes were made to the Perdue Grain and Oilseed, LLC - Cofield Air Permit No. 02875T32.

Page No.	Section[1]	Description of Changes
Cover Letter	Cover Letter	• Updated permit revision and dates
Cover Letter Attachment	Insignificant Activities List and Summary of changes to permit	• Changed IES38 (wet 50K bushel tank) to IES27D Wet tank (50K bushels, grain receiving) with collapsible filter and added it to the section with IES27A, B and C • Changed name of Weed seed silo (31A) to Junior Tank • Added IES39 15,000 gallon hexane storage tank • Added IES40 15,000 gallon hexane storage tank • Added IES41 Small cooling tower with 40gpm well water • Updated Summary of changes to permit for current permit renewal
3, 4	1, Table Permitted Emission Source(s) and Associated Air Pollution Control Device(s)	• Deleted Emission Source ESB3 • Deleted reference to .1109 Case by Case MACT and replaced with MACT DDDDD for Sources ESB4 and ESB5 • Deleted reference to No. 6 fuel oil for Source ESB5 • Moved Soybean meal storage tanks ES26A and ES26E from Soybean Plant to Grain Receiving
5	2.1 A Table	• Moved Soybean meal storage tanks ES26A and ES26E from Soybean Production Process Sources to Grain Receiving Sources • Removed Section 2.1 A and renumbered remaining sections. Deleted language for Emission Source ESB3
8	2.1 B Table	• Deleted reference to 15A NCAC 02D .0958
12	2.1 C Table	• Deleted reference to 15A NCAC 02D .0958
14	2.1 D Table	• Deleted reference to 15A NCAC 02D .1109 • Added reference to MACT DDDDD
16	2.1 E Table	• Deleted reference to No. 6 fuel oil and saleable animal fat • Deleted reference to 15A NCAC 02D .1109 • Added reference to MACT DDDDD
16	2.1 E.1 2.1.E.1.a 2.1 E.1.c	• Deleted reference to No. 6 fuel oil and saleable animal fat

Page No.	Section[1]	Description of Changes
16	2.1 E.2.a	• Deleted reference to saleable animal fat
17	2.1 E.3.a 2.1 E.3.c	• Deleted reference to saleable animal fat
17	2.1 E.4.c, f and g	• Deleted reference to No. 6 fuel oil
18	2.1 E.4.h	• Deleted 2.1 E.4.h.i and combine paragraph
18	2.1 E.4.i	• Deleted 2.1 E.4.i.i and combine paragraph
18	2.1 E.4.j	• Deleted reference to No. 6 fuel oil
18	2.1 E.4.k.ii	• Deleted reference to keeping records for 30-day average sulfur content. Renumbered condition.
18	2.1 E.4.l	• Deleted reference to No. 6 fuel oil and saleable animal fat
19	2.1 E.4.m and p	• Deleted reference to No. 6 fuel oil
19	2.1 E.5.c	• Deleted reference to No. 6 fuel oil
20	2.1 E.6.c and d	• Deleted condition and renumbered remaining sections
20	2.1 E.6.e and h	• Deleted reference to No. 6 fuel oil
20	2.1 E.6.g	• Deleted reference to salable animal fat
20, 21	2.1 E.7.c, d, e and f	• Deleted reference to No. 6 fuel oil and saleable animal fat
26	2.2 A	• Deleted reference to 15A NCAC 02D .0958
26	2.2 A.1	• Removed Section 2.2 A.1 and renumbered remaining sections
26	2.2 A.1.a.ii	• Deleted reference to Boiler ESB3
28	2.2 A.4.c, d and e	• Deleted reference to No. 4. And No. 6 fuel oil as well as references to thresholds of amounts burned
29	2.2 A.7	• Deleted 15A NCAC 02Q .0711 as per Permittee
30-41	2.2 B.1	• Added Section 2.2 B.1 and renumbered subsequent paragraphs and section references within Section 2.2.B.1 • Removed all references to ES26A and ES26E
42	2.2 C	• Deleted reference to ESB3 • Deleted reference to No. 6 fuel oil and saleable animal fat • Deleted references to 15A NCAC 02D .1109 • Added reference to MACT DDDDD
42-44	2.2 C.1	• Deleted 15A NCAC 02D .1109 and replaced with 15A NCAC 02D .1111

Page No.	Section[1]	Description of Changes
45	2.3	• Section deleted. No longer needed.
46-54	3	• Updated General Conditions to most recent version
55	ATTACHMENT	• Updated General Conditions to most recent version

Boilers at this facility

There are currently three boilers listed in the permit for this facility:
One natural gas/No. 4 fuel oil/No. 2 fuel oil/No. 6 fuel oil-fired boiler (ID No. ESB3),
One natural gas/No. 2 fuel oil/diesel fuel-fired rental boiler (ID No. ESB4) and
One natural gas/No. 2 fuel oil/No. 6 fuel oil/saleable animal fat-fired boiler (ID No. ESB5)

These boilers are currently subject to 15A NCAC 02D .1109: "Case-By-Case MACT"

The following information was received from the applicant in response to an e-mail inquiry about the status of these boilers:

- Regarding boiler ESB3, this unit is no longer at the facility and should be removed from the permit.
- Regarding boiler ESB4, this unit should remain in permit and is intended as a back-up for site operations. It would be a rental unit that is brought in upon notification to DAQ and is only utilized during emergency back-up scenarios.
- Regarding boiler ESB5, this unit should remain in permit and is intended to supply operational steam. The ability to combust residual No.6 fuel and saleable animal fat should be removed. The boiler as it exists today, is not set up to combust heavy fuels and given our present business model we do not anticipate future needs for its use. We are no longer involved in the rendering industry, therefore the ability to combust animal fat is not needed.
- During the last five years the combustion of "heavy liquid fuels" has not occurred, hence the percent heat input from these type fuels would be zero.
- The applicant proposes that the boilers that remain in the permit, be classified as "gaseous fuel boilers", that have the ability to combust distillate No. 2 fuel during periods of gas curtailment or interrupted service.

Thus, the boilers listed at this facility for the modified permit are as follows:
One natural gas/No. 2 fuel oil/diesel fuel-fired rental boiler (ID No. ESB4) and
One natural gas/No. 2 fuel oil-fired boiler (ID No. ESB5).

With respect to MACT Subpart DDDDD, the above boilers are considered existing gas 1 units and are permitted for natural gas and No. 2 fuel oil combustion, with fuel oil being combusted only during curtailment periods. The boilers have no **continuous oxygen trim system** and are greater than 10 million Btu per hour maximum heat input capacity, each.

5. Compliance History

Betsy Huddleston from the Washington Regional Office completed a compliance inspection of the facility on June 4, 2019. Based on observations made during the inspection, "the facility was in

compliance with all applicable air quality regulations and permit conditions at the time of the inspection."

6. Regulatory Review

Perdue Agribusiness is subject to the following regulations. This permit will be updated to reflect the most current stipulations for all applicable regulations.

15A NCAC 02D .0503: "Particulates from Fuel Burning Indirect Heat Exchangers"
For the boiler, feedmill and grain receiving, specifically Conditions 2.1 A.1, C.1 and D.1,

E = 1.090 x Q -0.2594 E = allowable emission limit for particulate matter in lb/million Btu
Q = maximum heat input in million Btu/hour.

ESB3 no longer exists. The Temporary Boiler ESB4 emission limit of 0.283 lb/MMBtu is calculated based on the combined heat inputs of former boiler ESB2, former boiler ESB3 and ESB4. There has been no temporary boiler on-site since the last inspection. The limit for ESB5 (0.288 lb/MMBtu) is calculated with the combined heat inputs of ESB3, ESB4 and ESB5. No. 6 oil is no longer burned at the facility. No. 2 fuel oil has been combusted since the date of last inspection. The AP-42 particulate emission factor for No. 2 fuel is 3.3 lb/1000 gallons, which equates to 0.024 lb/MMBtu for ESB5. The AP-42 particulate factor for natural gas is 0.007 lb/MMBtu.
There are no monitoring, recordkeeping or reporting requirements for the boilers in associated with 2D.0503.

The limit for ESB5 (0.288 lb/MMBtu) is calculated with the combined heat inputs of ESB3, ESB4 and ESB5. No. 6 oil is no longer burned at the facility. No. 2 fuel oil has been combusted since the date of last inspection. The AP-42 particulate emission factor for No. 2 fuel is 3.3 lb/1000 gallons, which equates to 0.024 lb/MMBtu for ESB5. The AP-42 particulate factor for natural gas is 0.007 lb/MMBtu.

There are no monitoring, recordkeeping or reporting requirements for the boilers in associated with 2D.0503.

No further changes to the permit terms for this rule are required under this permit renewal.

15A NCAC 02D .0515: "Particulates from Miscellaneous Industrial Processes"
This rule applies to stacks, vents, or outlets emitting particulates from industrial processes with no other applicable standards. The allowable emission rate is in terms of pounds per hour and is calculated using the following equation:
For process rates up to 30 tons per hour:
E = 4.10(P)0.67

For process rates greater than 30 tons per hour:
E = 55.0(P)0.11 - 40

Where: E = Allowable emission rate in pounds per hour
P = Process weight in tons per hour

In the current permit, only the equation for process rates less than 30 tons per hour was included. However, information in the latest inspection report indicates that several of these sources have a

maximum throughput greater than 30 tons per hour. Therefore, both equations were included in the permit for the following emission sources subject second allowable emission rate equation under regulation 2D .0515:

FEED MILL SOURCES:

- Receiving truck dump pit (ID No. ES2) and Receiving rail dump pit (ID No. ES3) with associated bagfilter (ID No. CD2)
- Receiving elevator and turn-head (ID No. ES4) with associated bagfilter (ID No. CD4)
- Two hammermills (ID No. ES5) with associated bagfilter (ID No. CD5)
- No. 1 pelleting system (ID No. ES6) with associated parallel cyclones (ID Nos. CD6A and CD6B)
- No. 2 pelleting system (ID No. ES7) with associated parallel cyclones (ID Nos. CD7A and CD7B)
- Feed loadout (ID No. ES10A)
- Finished feed loadout (ID No. ES30A)
- Corn day tank (ID No. ES29)

GRAIN RECEIVING SOURCES:

- Grain receiving (dump hopper), truck loadout, and railcar loadout operations (ID No. ES22) with associated bagfilter (ID No. CD22)
- One direct-fired natural gas/propane-fired grain dryer (ID No. ES23) and scalper prior to the dryer (ID No. ES32A) with associated screens (ID No. CD23A) in series with one cyclone (ID No. CD23B)
- One direct-fired natural gas/propane-fired grain dryer (ID No. ES24) and scalper prior to the dryer (ID No. ES32BA) with associated screens (ID No. CD24A) in series with one cyclone (ID No. CD24B)
- Corn tank (ID No. ES28)
- Soybean meal storage tanks (ID Nos. ES26A and ES26E)

SOYBEAN OIL PRODUCTION PROCESS SOURCES:

- Soybean meal cooler/dryer unit (ID No. ES12) with associated parallel cyclones (ID Nos. CD12A through CD12C)
- Soybean preparation process (ID No. ES14) with associated cyclones (ID Nos. CD14A and CD14B) installed in series with one bagfilter (ID No. CD14C)
- Meal grinding and screening process (ID No. ES15) with associated bagfilter (ID No. CD15)
- Hull grinding process (ID No. ES16) with associated bagfilter (ID No. CD16B)
- Flaking rolls aspiration system (ID No. ES18) with associated cyclone (ID No. CD18)
- Soybean meal storage tank with four loadouts (ID No. ES20) with associated bagfilter (ID No. CD20A)
- Whole soybean storage tank (ID No. ES21) with associated bagfilter (ID No. CD21)

The emissions sources that are being controlled with bagfilters (ID Nos. ES2 through ES7, ES12, ES14 through ES16, ES18 and ES20 through ES24) and cyclones (ID Nos. CD6A, CD6B, CD7A, CD7B, CD12A through CD12C, CD14A and CD14B are required to conduct inspections, maintain records of these inspections, submit a summary report, and submit reports documenting maintenance conducted, if requested. For emission sources not being controlled with bagfilters (ID Nos. ES10A, ES26A, ES26E,

ES28, ES29 and ES30A), records of production must be kept, and no reporting is required. No changes to the permit terms are necessary as part of this permit renewal.

15A NCAC 02D .0516: "Sulfur Dioxide Emissions from Combustion Sources"
For emission sources that fire natural gas, which has an inherently low sulfur content, compliance with this rule is expected. For natural gas/No. 2 fuel oil/Diesel fuel-fired combustion sources, testing/monitoring/ recordkeeping/reporting is not required. The following emission sources are subject to 2D .0516.

- Natural gas/No. 2 fuel oil/diesel fuel-fired rental boiler (ID No. ESB4) – this boiler is considered a temporary boiler and is not subject to NSPS Subpart Dc. Therefore 2D .0516 applies to this boiler when No. 2 fuel oil, diesel fuel, and naturel gas are being fired. The permit was updated to reflect that 2D .0516 applies for all fuels fired in the temporary boiler.
- Natural gas/No. 2 fuel oil-fired boiler (ESB5) – when firing fuel oil, this boiler is subject to the sulfur dioxide standards under NSPS Subpart Dc. Therefore, this regulation only applies when burning natural gas.
- Propane /natural gas-fired grain dryers (ID Nos. ES23 and ES24)

No further changes to the permit terms for this rule are required under this permit renewal.

15A NCAC 02D .0521: "Control of Visible Emissions"
Visible emission (VE) standards provided in this regulation are applicable to potential VE emissions from any stack, vent, or outlet. This regulation limits visible emissions to no more than 20 percent opacity when averaged over a six-minute period, except that six-minute periods averaging more than 87 percent opacity may occur not more than once in any hour not more than four times in any 24-hour period.

The associated permit condition will require that Perdue make a monthly VE observation and submit a summary report twice per year. During the two most recent compliance inspections, "0% VE" was observed from all of the sources. Compliance with this standard is expected.
The permit was updated to reflect the most current permit language for this regulation.

15A NCAC 02D .0958: "Work Practices for Sources of Volatile Organic Compounds"

On November 1, 2016, amendments to 15A NCAC 02D .0902 for VOC emissions were finalized to narrow applicability of work practice standards in 15A NCAC 02D .0958 from statewide to the maintenance area for the 1997 8-hour ozone standard. This change is being made primarily because the abundance of biogenic VOC emissions in North Carolina results in ozone formation being limited by the amount of available NOx emissions. Provisions of the Clean Air Act require VOC requirements previously implemented in an ozone nonattainment area prior to re-designation remain in place. However, facilities outside the maintenance area counties for the 1997 8-hour ozone standard would no longer be required to comply with the work practice standards in 15A NCAC 02D .0958. Hertford County has never been in nonattainment for ozone, and 15A NCAC 02D .0958 is no longer applicable to facilities, including Perdue, within the county. The permit condition (Section 2.2 A.1 of the current permit) for 15A NCAC 02D .0958 will be removed from the permit under this renewal.

15A NCAC 02D .0524: "NSPS Standards of Performance for Small Industrial- Commercial-Institutional Steam Generating Units (40 CFR Part 60, Subpart Dc)"

Boilers (ID Nos. ESB3 and ESB5) are the only boilers that were subject to the above rule. With the removal of boiler (ID No. ESB3) and No. 6 fuel oil and saleable animal fat being discontinued to be used as fuel in boiler (ID No. ESB5), there are some changes to Section 2.1 E. 4. of the current permit which addresses the above regulation pertaining to boiler (ID No. ESB5).

Emission Limitations

As per 40 CFR §60.42c(d) "no owner or operator of an affected facility that combusts oil shall cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of … 0.50 lb/MMBtu … heat input from oil." And;

Per 40 CFR §60.43c(c) "no owner or operator of an affected facility that combusts coal, wood, or oil and has a heat input capacity of 8.7 MW (30 MMBtu/h) or greater shall cause to be discharged into the atmosphere from that affected facility any gases that exhibit greater than 20 percent opacity."

Thus, there are no changes to the existing emissions limits in Section 2.1 E. 4. b., and c., of the current permit because boiler ESB5 remain subject to NSPS Subpart Dc.

Testing, Monitoring and Reporting Requirements

Also, there are no changes to the testing, monitoring and reporting requirements outlined in Section 2.1 D. 4.g through p., of the permit.

15A NCAC 2D .1109: CAA § 112(j); "Case-by-Case MACT for Boilers & Process Heaters"

The natural gas/No. 2 fuel oil/diesel fuel-fired rental boiler (ID No. ESB4) and natural gas/No. 2 fuel oil-fired boiler (ID No. ESB5) are currently subject to 15A NCAC 2D .1109: CAA § 112(j); Case-by-Case MACT for Boilers & Process Heaters. However, this regulation does not apply past May 19, 2019, and has been removed from the modified permit.

15A NCAC 02D .1111: "National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters (MACT) Subpart DDDDD)"

The two boilers (ID Nos. ID No. ESB4 and ID No. ESB5) are subject to the above regulation, i.e., (Boiler MACT Subpart DDDDD) starting May 20, 2019. The language for this regulation is incorporated into the modified permit. Below are the requirements of applicability, definitions, nomenclature, compliance dates, notifications, general compliance requirements, work practice standards, energy assessment requirements, record keeping requirements, reporting requirements and their brief description of their associated MACT regulations.

These two boilers (ID Nos. ID No. ESB4 and ID No. ESB5) are:
Existing gas 1 units permitted for burning natural gas as a primary fuel and oil only during periods of curtailment. The boilers **have no auto trim** and are greater than 10 million Btu per hour maximum heat input capacity each.

Applicability

The existing boilers ESB4 and ESB5, per 40 CFR §63.7485, 40 CFR §63.7490(d) and 40 CFR §63.7499(l), are major sources of HAPs emissions and are designed to burn gas 1 fuels with a heat input capacity equal to or greater than 10 million Btu per hour so they are subject to MACT Subpart DDDDD.

Compliance Date

As per 40 CFR §63. 7510(e) and 40 CFR §63.56(b) the sources shall be subject to the requirements of this standard starting May 20, 2019 (See Section 2.2 C. 1. e., of the modified permit).

Definitions and Nomenclature

The definitions and nomenclature contained in 40 CFR §63.7575 shall apply and the applicant shall only burn liquid fuel for periodic testing of liquid fuel, maintenance, or operator training, not to exceed a combined total of 48 hours during any calendar year, and during periods of gas curtailment or gas supply interruptions of any duration (See Section 2.2 C. 1. b, and c., of the modified permit).

General Provisions

40 CFR §63.7565 references Table 10 of MACT Subpart DDDDD to indicate parts of the General Provisions in 40 CFR §63.1 through 63.15 that apply to subject boilers (See Section 2.2 C. 1. d., of the modified permit).

Notifications

40 CFR § 63.7545(e): Required to conduct an initial compliance demonstration as specified in 40 CFR §63.7530, the applicant must submit a Notification of Compliance Status (NOCS) according to 40 CFR §63.9(h)(2)(ii).

For the initial compliance demonstration for each boiler the applicant must submit the NOCS, including all performance test results and fuel analyses, before the close of business on the 60th day following the completion of all performance test and/or other initial compliance demonstrations for all boilers at the facility according to 40 CFR §63.10(d)(2).

40 CFR §63.7530(e): The applicant must include with the NOCS a signed certification that either the energy assessment was completed according to Table 3 to this subpart, and that the assessment is an accurate depiction of your facility at the time of the assessment, or that the maximum number of on-site technical hours specified in the definition of energy assessment applicable to the facility has been expended.

As per Table 3 of MACT Subpart DDDDD, an existing boiler or process heater **without a continuous oxygen trim system and** with heat input capacity of 10 million Btu per hour or greater must conduct a tune-up of the boiler **annually**, as specified in § 63.7540. Units in the Gas 1 subcategories will conduct this tune-up as a work practice for all regulated emissions under MACT Subpart DDDDD (See Section 2.2 C. 1. h., of the modified permit).

40 CFR §63.7530(f): Applicant must submit the NOCS containing the results of the initial compliance demonstration according to the requirements in 40 CFR §63.7545(e).

40 CFR §63.7545(e): Applicant must conduct an initial compliance demonstration as specified in 40 FR §63.7530 and must submit a NOCS according to 40 CFR §63.9(h)(2)(ii) (details when the notification must be sent).

For the initial compliance demonstration for each boiler, applicant must submit the NOCS, including all performance test results and fuel analyses, before the close of business on the 60th day following

the completion of all performance test and/or other initial compliance demonstrations for all boiler at the facility according to 40 CFR §63.10(d)(2) (Reporting results of performance tests).

The NOCS report must contain all the information specified in paragraphs 40 CFR §63.7545(e)(1) through (8), as applicable (this required information is outlined in Section 2.2 C. 1. f. i., and ii., of the modified permit).

40 CFR §63.7540(a)(10): For the applicant to demonstrate continuous compliance with the work practice standards in Table 3 of MACT Subpart DDDDD, for each boiler that has a heat input capacity of 10 million Btu per hour or greater, applicant must conduct an **annual** tune-up of the boiler to demonstrate continuous compliance as specified in 40 CFR §63.7540(a)(10)(i) through (vi) i.e., (as mentioned under Section IV. x., of the "Work Practice Standards" of this review, below. Also, See Section 2.2 C. 1. f. ii. (A), of the modified permit).

Applicant must conduct the tune-up while burning the type of fuel that provided the majority of the heat input to the boiler or process heater over the 12 months prior to the tune-up. This frequency does not apply to limited-use boilers, or units with continuous oxygen trim systems that maintain an optimum air to fuel ratio. The details of the annual tune-up of the boiler to demonstrate continuous compliance are specified in Section 2.2 C. 1. i., through iv., of the modified permit.

The "work practice standards" for an existing boiler located at a major source facility, not including limited use units as specified by Table 3 to MACT Subpart DDDDD is as follows: "must have a one-time energy assessment performed by a qualified energy assessor" (as mentioned under Section IV. x., of the "Energy Assessment Requirements" of this review, below. Also, See Section 2.2 C. 1. f. ii. (B)., of the modified permit).

The applicant shall submit a notification of intent to fire an alternative fuel (i.e., fuel oil) within 48 hours of the declaration of each period of natural gas curtailment or supply interruption. The notification must include the information in 40 CFR §63.7545(f).

40 CFR §63.7545(f): For the boilers burning gas 1 fuels and the applicant intends to use a fuel other than natural gas or gaseous fuel during a period of natural gas curtailment or supply interruption, applicant must submit a notification of alternative fuel use within 48 hours of the declaration of each period of natural gas curtailment or supply interruption (See Section 2.2 C. 1. g., of the modified permit).

All the above notifications requirements are specified in Sections 2.2 C. 1. f., and g., of the modified permit.

Work Practice Standards

As required by 40 CFR §63.7540(a)(10)(i) through (vi) the applicant shall inspect the burner, and clean or replace any components of the burner as necessary, inspect the flame pattern, inspect the system controlling the air-to-fuel ratio, optimize total emissions of CO, measure the concentrations in the effluent stream of CO, maintain report containing the information on the concentrations of CO, description of any corrective actions, and the type and amount of fuel used over the past 12 months after the tune-up (See Sections 2.2 C. 1. h. i., of the modified permit).

40 CFR §63.7515(d): Each annual tune-up shall be conducted no more than 13 months after the previous tune-up (See Sections 2.2 C. 1. h. ii., of the modified permit).

As per 40 CFR §63.7540(a)(13) and 40 CFR §63.7515(g): If the boiler is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup (See Sections 2.2 C. 1. h. iii., of the modified permit).

40 CFR § 63.7500(a)(3): At all times, the applicant must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions (See Sections 2.2 C. 1. h. iv., of the modified permit)

Energy Assessment Requirements

As per Table 3 of MACT Subpart DDDDD, for "an existing boiler or process heater located at a major source facility, not including limited use units" the applicant shall have a one-time energy assessment performed by a qualified energy assessor. The energy assessment must address the requirements in 40 CFR 63 Subpart DDDDD, Table 3, with the extent of the evaluation for items (a) to (e) in Table 3 i. e., (visual inspection of the boiler, evaluation of operating characteristics of the boiler, specifications of energy using systems, operating and maintenance procedures, and unusual operating constraints, inventory of major energy use systems consuming energy from affected boilers, review of available architectural and engineering plans, facility operation, maintenance procedures, fuel usage and review of the facility's energy management program and provide recommendations for improvements) (See Sections 2.2 C. 1. i., of the modified permit).

Record keeping Requirements

40 CFR §63.7555(a)(1): Regarding what records to keep – the applicant must keep a copy of each notification and report that was submitted to comply with this regulation including all documentation supporting any initial NOCS or semi-annual compliance report submitted, according to the requirements in 40 CFR §63.10(b)(2)(xiv) - i. e., general record keeping requirements include all documentation supporting initial NOCS (See Sections 2.2 C. 1. j. i., of the modified permit).

40 CFR §63.7540(a)(10)(vi): Maintain on-site and submit, if requested by the DAQ a report containing the information as below:

- the concentrations of carbon monoxide in the effluent stream (by volume) and oxygen measured at high fire or typical operating load, before and after the tune-up of each source,
- description of any corrective actions taken as a part of the tune-up and
- the type and amount of fuel used over the 12 months prior to the tune-up.
  (See Sections 2.2 C. 1. j. ii., of the modified permit).

The facility to keep all associated records for "Work Practice Standards" (outlined in Section 2.2 C. 1. h., of the permit) and the "Energy Assessment Requirements" (outlined in Section 2.2 C. 1. i., of the permit). The requirement to keep all these records are stipulated in Section 2.2 C. 1. j. iii., of the modified permit.

40 CFR §63.7555(h): for a unit designed to burn gas 1 subcategory subject to this MACT and uses an alternative fuel other than natural gas, refinery gas, gaseous fuel subject to another MACT, or NSPS standard the applicant must keep records of the total hours per calendar year that alternative fuel is burned and the total hours per calendar year that the unit operated during periods of gas curtailment or gas supply emergencies (See Sections 2.1 A. 5. o. iv., of the modified permit).

40 CFR §63.7560: records must be in a form suitable and readily available for review, records must be kept for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record (See Section 2.2 C. 1. k., of the modified permit).

Reporting Requirements

40 CFR §63.7550(b): Applicant must submit each report, according to 40 CFR §63.7550(h) and by the date in Table 9 MACT Subpart DDDDD (See Section 2.2 C. 1. m., of the modified permit).

40 CFR §63.7550(h)(3): Does require the applicant must submit electronically all reports required by Table 9 MACT Subpart DDDDD using the subpart specific reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX). The applicant may also submit an alternate electronic file consistent with the XML schema listed on the CEDRI Web site (http://www.epa.gov/ttn/chief/cedri/index.html), once the XML schema is available. If the reporting form specific to this subpart is not available in CEDRI at the time that the report is due. Applicant must begin submitting reports via CEDRI no later than 90 days after the form becomes available in CEDRI (See Sections 2.2 C. 1. m. i., of the modified permit).

As per 40 CFR §63.7550(a) and (c), Table 9 MACT Subpart DDDDD the facility must include in the compliance report information as outlined in Sections 2.2 C. 1. n., of the modified permit including operating parameter limitations, beginning and ending dates of the reporting period, dates of the most recent tune-ups, dates of the most recent burner inspections, etc.

15A NCAC 02D .1111: "National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines" (MACT) Subpart ZZZZ no changes were made to these conditions.

15A NCAC 02D .1111: "National Emission Standards for Hazardous Air Pollutants for Solvent Extraction for Vegetable Oil Production (MACT) Subpart GGGG" no changes were made to these conditions.

15A NCAC 02D .0524: "NSPS Standards of Performance Stationary Compression Ignition Internal Combustion Engines (40 CFR Part 60, Subpart IIII)" no changes were made to these conditions.

15A NCAC 02D .1806: "Control and Prohibition of Odorous Emissions." no changes were made to these conditions.

15A NCAC 02Q .0317: "Avoidance Conditions"

In order to avoid applicability of 15A NCAC 2D .0530(g), particulate matter (PM)/PM_{10} emissions from this source **(ID No. ESB5)** shall be less than 15 tons per consecutive 12-month period.

In order to avoid applicability of 15A NCAC 2D .0530(g), $PM_{2.5}$ emissions from this source **(ID No. ESB5)** shall be less than 10 tons per consecutive 12-month period.

In order to avoid applicability of 15A NCAC 2D .0530(g), sulfuric acid mist emissions from this source **(ID No. ESB5)** shall be less than 7 tons per consecutive 12-month period.

The only change to this condition was the removal of fuels and boiler ESB3.

7. PSD, 112(r), CAM

PSD

Perdue is classified as a minor emission source under PSD. With the issuance of Air Permit No. 02875T28 on January 25, 2011, Perdue accepted facility-wide avoidance conditions to limit emissions of VOC, NOx, and SO_2 to less than 250 tons per year, each. Please refer to the permit review associated with that permit for a more detailed discussion of these avoidance conditions.

Compliance with the SO_2 and NO_X emissions limitations is demonstrated by limiting the fuel usage as follows: natural gas usage shall not exceed 1,818 million ft^3/year; No. 2 fuel oil shall not exceed 300,000 gal/year; and No. 4 fuel oil shall not exceed 20,000 gallons/year. Additionally, Perdue is required to keep monthly records of facility-wide fuel usage.

Perdue also has PSD avoidance conditions for boiler (ESB5). Under these conditions, PM/PM_{10} emissions must be less than 15 tpy; $PM_{2.5}$ emissions must be less than 10 tpy; and sulfuric acid mist must be less than 7 tpy.

112(r)

The facility is not subject to Section 112(r) of the Clean Air Act requirements because it does not store any of the regulated substances in quantities above the 112(r) thresholds. No change with respect to 112(r) is anticipated under this permit renewal.

Compliance Assurance Monitoring

The compliance assurance monitoring (CAM) rule requires owners and operators to conduct monitoring to provide a reasonable assurance of compliance with applicable requirements under the act. Monitoring focuses on emissions units that rely on pollution control device equipment to achieve compliance with applicable standards. An emission unit is subject to CAM, under 40 CFR Part 64, if all of the following three conditions are met:

- The unit is subject to any non-exempt emission limitation or standard for the applicable regulated pollutant.
- The unit uses any control device to achieve compliance with any such emission limitation or standard.
- The unit's pre-control potential emission rate exceeds either 100 tpy (for criteria pollutants) or 10 tpy of any individual/25 tpy of any combination of HAP.

Facility-wide CAM was addressed under the previous Title V renewal (02875/T31, October 14, 2009) for the particulate emissions sources and bagfilters permitted at that time. Since that renewal, a grain receiving (dump hopper), truck loadout and railcar loadout (ID No. ES22B) with associated (ID No. CD22B) bagfilter (2,187 square feet of filter area) was added as part of Air Permit No. 02875T32 issued on September 20, 2016. As seen in the table below, CAM is not applicable to the truck load out.

Emission Source ID	Control Device ID	Pollutant	Applicable Regulations	Precontrolled Emissions (tpy)	Is CAM Required?
a grain receiving (dump hopper), truck loadout and railcar loadout (ID No. ES22B)	Bagfilter (ID No. CD22B)	PM	15A NCAC 2D .0515 15A NCAC 02D .0521	83.27[1]	No

[1]Precontrolled emissions value from September 20, 2016 Permit Review by Brian Bland.

8. Facility Wide Air Toxics

The Washington Regional Office most recent compliance inspections which were conducted on 5/29/2019 and 6/04/2019 by Ms. **Betsy Huddleston**, states 2Q .0701(c) states, "facilities required to comply with MACT standards under 15A NCAC 02D .1109, .1111, or .1112 or 40 CFR Part 63 shall be deemed in compliance with this Subchapter and 15A NCAC 02D .1100 unless the Division determines that modeled emissions result in one or more acceptable ambient levels in 15A NCAC 02D .1104 being exceeded. This review shall be made according to the procedures in 15A NCAC 02D .1106." Both boiler ESB5 and the soybean oil extraction plant are regulated by MACTs (Subpart 4G and eventually 5D when 112j runs out). Therefore, the burden of future toxics review and modeling could fall on DAQ for Perdue's boilers and soybean oil extraction process should Perdue choose to have the toxics conditions removed from their permit. Perdue had the option at permit renewal in 2014 to ask to have the toxics limitations for these sources removed from the permit. The company decided to keep the limits in the permit.

Perdue revised their facility-wide air toxics modeling when permit T28 for ESB5 was issued. The toxics modeling is supposedly optimized.

Section 2.2 A. 2., of the permit addresses 15A NCAC 02D .1100: "Control of Toxic Air pollutants." Under this rule in the permit is cited "As of January 25, 2011, the Permittee has demonstrated compliance with the following permit limits in accordance with the completed application (4600082.10B) received June 17, 2010. The Permittee has evaluated all toxic air pollutants covered in 15A NCAC 02D .1104 for all sources at the facility, excluding the sources exempt from evaluation under 15A NCAC 02Q .0702. Any future demonstrations to comply with 15A NCAC 02D .1104 shall only be required on a five-year basis."

Section 2.2 A. 2. i., - this Section also lists the facility wide (combined total of all permitted emission sources) the emissions of arsenic and inorganic arsenic compounds, cadmium, benzene, beryllium, formaldehyde, nickel metal and fluorides listing their annual, daily and hourly emissions limits.

Section 2.2 A.1.ii., lists the n-Hexane emissions limits for various sources.

The latest toxics modeling on file is dated December 14, 2010, addressed to Mr. Rahul Thaker and the modeling done by Mr. Jerry Freeman, Meteorologist of the Air Quality Analysis Branch. This modeling showed that eight pollutants (arsenic, cadmium, benzene, beryllium, formaldehyde, nickel, fluoride and n-hexane) were evaluated, and based on the emission rates modeled, all of these pollutants were at 99% of the Acceptable Ambient Level (AAL).

The toxics issue was last addressed during their last renewal (Application Number: 4600082.13B, for issuance of Air Quality Permit No. 0275T31). The review engineer wrote "this regulation lists the toxic permitting emission rates (TPERs) for each regulated TAP. The Permittee has made a demonstration that emissions of the listed pollutants are each below their respective TPERs. A permit modification is required prior to exceeding any of these limits. The current permit requires that the Permittee maintain records indicating continued compliance with these emission rates."

No sources are being added with this renewal. However, the boiler (ID No. ESB3) is being removed and No. 6 fuel oil and saleable animal fat as fuel is being discontinued from boiler (ID No. ESB5). This modification (renewal) does not pose an unsafe risk to human health because the toxic air pollutant emissions remain below the AALs for their respective pollutant thresholds.

Monitoring/Recordkeeping/Reporting

The facility demonstrates compliance by staying below the PSD avoidance limit as stated in Section 2.2 A. 2. c., in the current permit.

There are no changes to the emissions limits, testing, monitoring, record keeping and reporting requirements. This facility is expected to meet continued compliance since a boiler is being removed and No. 6 fuel oil and saleable animal fat as fuel is being discontinued.

9. Public Notice/EPA and Affected State(s) Review

A notice of the DRAFT Title V Permit shall be made pursuant to 15A NCAC 02Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Consistent with 15A NCAC 02Q .0525, the EPA will have a concurrent 45-day review period. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 02Q .0522, a copy of each permit application, each proposed permit and each final permit shall be provided to EPA. Also, pursuant to 02Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice provided to the public under 02Q .0521 above. No State or Local Program is affected within 50 miles of this facility.

10. Other Regulatory Considerations

- A P.E. seal is NOT required for this renewal application.
- A zoning consistency determination is NOT required for this renewal application.

11. Recommendations

The permit renewal application for Perdue Agribusiness, LLC in Cofield, Hertford County, North Carolina has been reviewed by the DAQ to determine compliance with all procedures and requirement. The DAQ has determined that this facility is complying or with achieve compliance, as specified in the permit, with all requirements that are applicable to the affected sources. The DAQ recommends the issuance of Air Permit No. 02875T33.